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Memo

managed by Brookhaven Science Associates
for the U.S. Department of Energy

Date: May 04, 2001

To: D.I. Lowenstein

From: M. Van Essendelft

Subject: **Assessment of the ISO 14001 EMS Implementation Collider-Accelerator Department**

Assessment # QA 2001-095

Date of Audit: May 2-3, 2001

Objective: This was an internal Environment Management System (EMS) audit conducted to satisfy the ISO 14001 requirement for such audits and to review program implementation in the Collider-Accelerator Department (CA) in preparation for the upcoming NSF registration audit. All elements of ISO 14001 were covered, however not all procedures and processes supporting CA's EMS were reviewed. The results of this audit are documented in the "Collider-Accelerator EMS Assessment ISO 14001". The "Collider-Accelerator EMS Assessment ISO 14001" and supporting documentation are on file in the C-A Quality Assurance office.

Scope: Collider-Accelerator Department

Auditors: Five auditors conducted the audit:

(1) Mel Van Essendelft (C-A) lead auditor
(2) Paul Lang, (C-A) May 3 only
(3) Chris Porretto (SMD) May 2 only
(4) Dick Savage (BNL QA)
(5) John Selva (ESD)

Noteworthy Practices, Minor nonconformances and Recommendations:

The implementation of the C-A EMS is continuing to mature as it prepares for its second registration audit. The results of this audit revealed conformance in all areas with the exception of minor nonconformances, which are documented below. It should be noted that minor nonconformances were formerly classed as observations. While observations are not normally tracked through the ATS system, for the purposes of the EMS program these items will be tracked.

There are a number of noteworthy practices found during the course of the audit and they are listed as follows:

1. The C-A is dedicated to an effective use of the Family ATS system to track actions, including EMS actions, to closure.
2. There is a high level of conscientiousness and commitment to the implementation of environmental controls at the "bench" level.
3. In some areas there is an increased use of pump spray applications instead of aerosol. In the Vacuum Lab the use of acetone for cleaning is being minimized through the use of isopropyl alcohol where practical.
4. There is a plan in place to build a storage building north of the shielding/block storage area behind building 912 and reduce potential soil contamination in that area.
5. Organic core solder is being used when applicable rather than tin-lead solder on regular p.c. boards.
6. The C-A Soil Cap program, to date, has been effective as evidenced by the decreased levels of tritium found at ground water monitoring locations.
7. The C-A Department, to assure its own emergency preparedness, has conducted its own environmental emergency preparedness drill.
8. The C-A water systems group is performing trending/ causal analysis on plc controlled water systems to determine cause and actions on types of water losses.
9. C-A's dedication to continual improvement can be seen in the following efforts:
    a. ADS-0007 includes provisions to shelter, isolate and put additional water systems, currently manually controlled for make-up, under PLC control and tracking.
    b. A Pollution Prevention (P2) funding request has been made to eliminate the remainder of PCB capacitors in the LINAC.

Minor NCR #1. 4.4.5 Document Control

During the review of Document Control it was observed that the C-A Department had recently put its program documents under revision control. A review noted two errors in document numbers in the footers of EMS program documents.
Recommendation: Review additional EMS Program documentation for similar errors and make all necessary corrections.

Minor NCR #2. 4.4.5 Document Control

OPM 2.19 was omitted from the Operational Control Form for Cooling Water Systems.
Recommendation: Add the procedure to the Cooling Water System OCF and review all other applicable documentation.

Minor NCR #3 4.4.5 Document Control

A review of OPM 1.4.7, Format and Document Control of Derivative Procedures does not clarify procedure for designating additional signatures and the cover

sheet used for EMS documentation is currently specified for use with quality assurance documents.
Recommendation: Clarify additional signature process, eliminated the "no" box on the cover sheet, and broaden the use of the QA cover sheet to include EMS documents.

Minor NCR #4 4.4.6 Operational Control

A review of completed Water System Make-up Checklists (OPM 8.32.a) found a checklist where actions for closure were not documented.
Recommendation: Document what was done to close the item and review the system for documenting closure where cross-departmental groups are involved.

Minor NCR #5 4.3.2 Legal and Other Requirements

A BNL Nonradioactive Emission Source Inventory Form for a hooded area in the Vacuum Lab was dated on March 1, 1999 that the equipment/operation was put into service and the form stated that the anticipated length of time the emission source would be in operation was one year. The source is still in operation and the form has not been updated. No determination letter was available for documenting permit requirement status.
Recommendation: Obtain a determination letter which documents permit requirement status and assure that all other hoods have applicable permits and/or a letter documenting the fact that a permit is not required.

Recommendation #1 While worker knowledge of the application and importance of environmental controls used in their area is strong, there is still a need for a better understanding of the EMS program and terminology.
Recommendation: Conduct refresher forums which highlight the EMS program.

Recommendation #2 The Operational Control Form for the Cooling Water System references the use of certain attachments of OPM 8.31 rather than all of the forms.
Recommendation: List them on the OCF as the 8.31 series so that they are all included.

Recommendation #3 The EMS Job Specific EMS Training needs clarification as to when review and update are performed as well as to when retraining is required. Currently a one time training requirement is in force.
Recommendation: Clarification should be made as to when updates/ reviews must be performed and when retraining is required.

Recommendation #4 Beam separators being stored in building 912 have leaked epoxy on the floor and the epoxy has hardened.
Recommendation: Clean the epoxy off the floor and assure that preventative measures are in place to avoid additional leakage.

Recommendation #5 Based on discussions with various C-A groups, the CMS tracking system jeopardizes accurate tracking of those chemicals which are truly hazardous and critical. The current volume of tracking due to the inclusion of non-critical items such as lock-tite, kapton tape, etc. make proper maintenance of the system extremely difficult.
Recommendation: A request be made through the appropriate channels to streamline the tracking to those items which are truly hazardous and for the elimination of those items which are not.

Recommendation #6 During the course of auditing emergency preparedness, it was noted that there were numerous benefits in the C-A performing its own drill.
Recommendation: It is recommended that the C-A Department continue to perform its own drill(s) on a scheduled basis.

Recommendation #7 Electronic shops are using 60-40 Lead/Tin solder. Employees are not aware of alternative, more environmentally benign solders that may be available from Laboratory stock.
Recommendation: Review a substitute for 60-40 solder and obtain an item availability list from BNL stock for distribution to supervisors.

Audit Interviews: The auditors interviewed the following C-A personnel: Derek Lowenstein, Ed Lessard, R. Karol, Lori Stigler, Dave Passarello, Joel Scott, Art Archibald, Ed Koropsak, Fred Kobasiuk, John White, Russ Grandinetti, John deBoer, Larry Vogt, Ted Lelle, Steve Gill, Al Pendzick, Chuck Carlson, Jim Licari, Vinnie Lodestro, Chuck Schaefer, Paul Lang, Denis Donahue, Tony Curcio, and Bill Venegas.

Signature on File

D.I. Lowenstein

Signature on File

E.T. Lessard

cc.:

S. Briggs	R. Karol	D.I. Lowenstein	D. Passarello	J. Scott
D. Barton	P. Lang	J. Maraviglia	P. Pile	L. Stiegler
J. Hauser	E. Lessard	A. McNerney	T. Roser	W. Weng